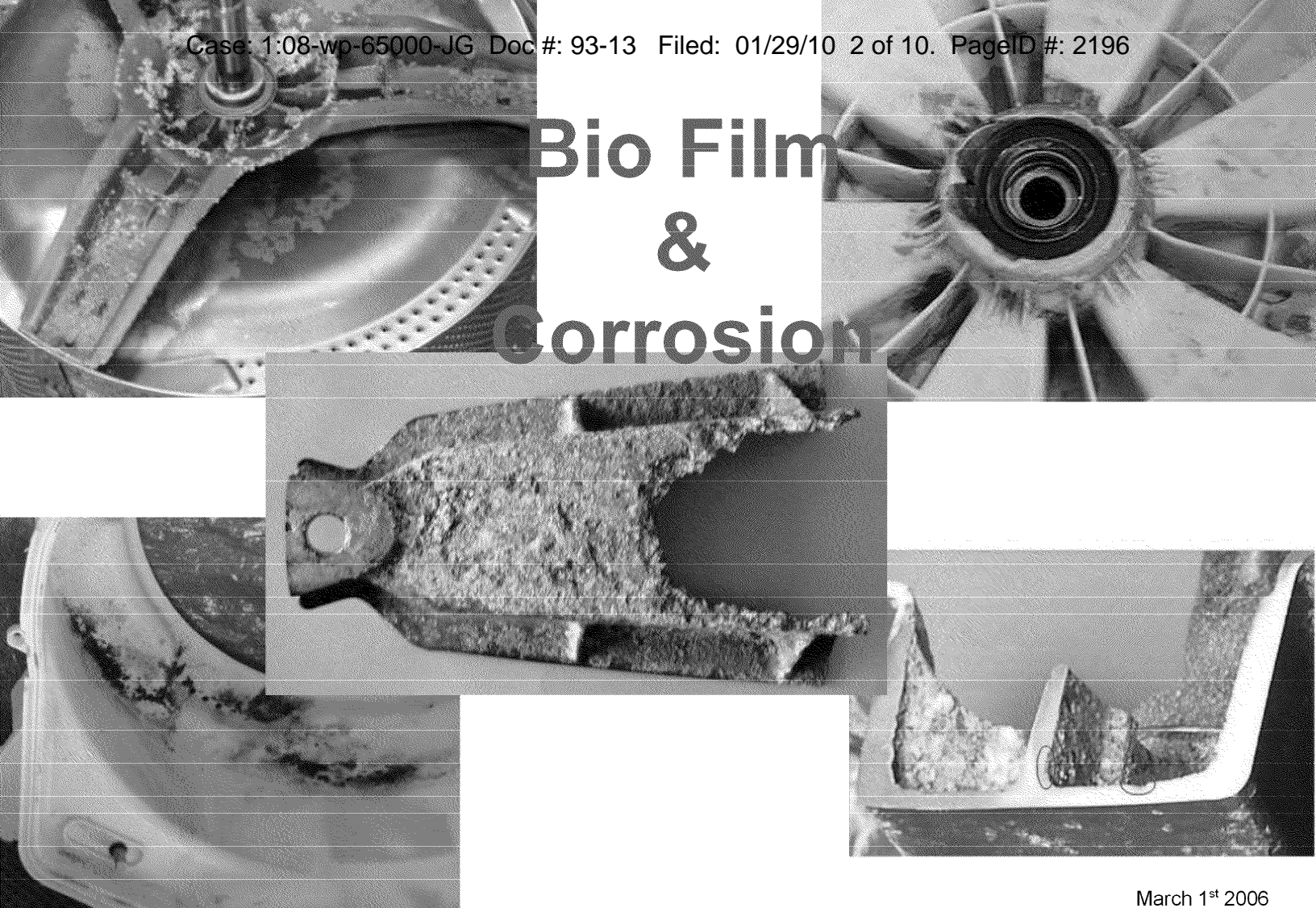


EXHIBIT 10

Bio Film & Corrosion



March 1st 2006
W0245717



What is Bio Film

- * We are in daily contact with Bio Film. For example the plaque that forms on ones teeth and causes tooth decay is a type of bacterial biofilm. The "gunk" that clogs drains is also biofilm. Organic and to some extent inorganic materials which build up in wet areas of a washing machine are Bio Film
- * For this project, Bio Film describes all kinds of deposits which occur in the wet area of the washing machine, whether organic or inorganic. Strictly speaking we have two separate phenomena:
 - * **Odours:** Bio Film, which forms when bacteria adhere to surfaces in aqueous environments and begins to excrete a slimy, glue-like substance that can anchor them to all kinds of materials such as metals, plastics, soil particles. A Bio Film can be formed by a single bacterial species, but more often biofilms consist of many species of bacteria, as well as fungi, algae, debris and corrosion products. When this organic matter decays it will start to smell. This leads to customer complaints.
 - * **Corrosion:** Closely associated with the primarily organic Bio Film are inorganic deposits. They consist of detergent residues, minerals which are deposited during the wash process and fibres and soils coming from the laundry. They can serve as substrate for Bio Film. The deposits lead to so called crevice corrosion of vital parts such as the aluminium cross piece which holds the drum. This corrosion is usually only noticed by the customer when the component fails.



Effects of Bio Film

- * The consumer sees and smells Bio Film:
 - * Black mould can appear on the bellows or inside the dispenser
 - * As BioFilm decays bad smells develop. This is especially noticable if the door is kept shut after the machine has been used.
 - * If the machine is heavily infected even the laundry will smell musty after the programme has ended..
- * Potentially even more serious is the corrosion risk associated with Bio Film. This occurs in two ways:
 - * Through microbiological corrosion due to acid environment created by bio film organisms
 - * Crevice corrosion caused by the anaerobe conditions beneath the bio film and inorganic deposits. This affects primarily the aluminium drum cross piece, but the stainless steel drum can also be affected
 - * Use of hypochloride bleach accelerates this corrosion
- * Examination of Access machines from the field shows signs of corrosion of the cross piece after 2 years of use
- * Both phenomena, odors and corrosion, can be observed independantly from one another.



Root Causes

- * To flourish, Bio Film needs:
 - * Humidity, preferably at higher temperatures
 - * Nutrients for organic growth
 - * Time to flourish in a protected environment
- * Odours will develop
 - * When bio film decays
 - * When organic deposits decompose
 - * When water from the drain system seeps back into the tub
- * Crevice corrosion is encouraged by:
 - * Low phs
 - * Lack of oxygen on the aluminium surface
 - * Chloride
 - * Temperature



Humidity inside the Tub

Contributing Factors:

- * Leaving the door closed after the program is finished
- * Insufficient draining at program end
- * Water flows back after draining through Eco-System (non-return valve between tub & drain pump)
- * No Spin selected or other reasons for laundry still being dripping wet at end of cycle, e.g. sudsing or excessive unbalance, leading to spin speed reduction

Countermeasures:

- * Leave door open
- * Forced ventilation
- * Tight Eco System: keep contamination of tub from drain pump & hose to a minimum
- * Minimise sump: avoid all stagnant water after end of cycle



Reduce Organic Matter

Sources:

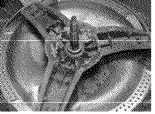
- * From detergents, especially liquids,
- * Soils on clothes are partly organic
- * Fibres coming off clothing, such as cotton.
- * Even fresh water contains organic matter, the risk is even greater for private wells.

Countermeasures:

- * Prescribe use of HE powder detergents
- * Ensure sufficient rinsing to minimise carry-over
- * Ensure sufficient rinsing for all programs, even for Express Cycle, reduced or aborted spin etc..
- * Use ant-bacterial additives on plastic material etc.
- * Optimise design to eliminate all pockets, cavities etc.
- * Ensure that the machine keeps itself clean by rinsing itself automatically

Slide

Bio Film Basics
W0245722



- * Measures to discourage Bio Film will also reduce risk of Corrosion.
- * Requirements to discourage deposits and growth of bio film inside tub, especially on the cross piece:
 - * Machine must keep itself clean.
 - * Robust design of tub, drum and cross piece to avoid deposit growth and facilitate self cleaning
 - * Water system must make internal rinsing of tub possible
 - * Wash programs must include internal cleaning steps
- * Use corrosion proof aluminium alloys
- * Limit the amount of bleach the consumer can use
- * Design a cleaning cycle which does not use hyperchloride bleach
- * Give clear instructions to the customer how to keep the machine clean_



- * Wash habits are changing: :
 - * Customers are using fewer high temperature programs. Bio Film is not destroyed at temperatures $< 60^{\circ}\text{C}$
 - * Increased use of liquid detergents (with reduced corrosion inhibitors).
 - * Short cycle time has priority, leads to full load being washed in Express Cycle with insufficient rinse
 - * Market requires big load capacity, leads to is a sales
- * Wash programmes have been optimized so that good cleaning results are achieved with less water at lower temperatures
 - * Poor cleaning of inside of machine,
 - * Rinse efficiency has been reduced as a result of lower water consumption
- * Access is basically a European design, not necessarily suited to US washing habits:
 - * Low temperatures used, many machines without heater
 - * HE detergent not always used. This leads to sudsing, which results in poor rinsing
 - * Widespread use of bleach in quite high quantities
- * Lack of specifications and poorly understood design concepts
 - * Avoidance of deposits not a design requirement. This would require contributions from mechanical design hydraulic design and wash technology.
 - * Consequence of bleach usage not fully understood.



- * Cleaning cycle introduced mid 2005
 - * Objective: enable customer to eliminate odors
 - * Initially as a hidden cycle with the recommendation to use no more than once a month to avoid corrosion risk.
 - * As a visible cycle introduced for Horizon and planned for Matador 2. Both machines have increased the size of their bleach dispenser compartment.
 - * This cycle does not address the root cause: odors caused by a combination of humidity and decaying organic material in the tub of the washing machine
- * Engineering consultant Tech Solute, Karlsruhe, charged with analysing and testing methods to simulate bio film related deposits. Objective of the project is to provide a method of differentiating concepts as to their susceptibility to deposits, bio film and risk of corrosion.
 - * Current status: 3 different design concepts are being tested using inorganic deposits.
- * First draft for drum cross piece design guideline published 9 months ago.
- * Working with detergent industry etc. to introduce non-aggressive bleach substitute - Tony Hardaway
- * Several projects with raw material suppliers or suppliers of additives to introduce anti-microbial components (e.g. bellows, detergent dispenser etc.). - Milliken